

Notice of Allowability

Application No.

09/891,466

Examiner

Linh M. Nguyen

Applicant(s)

DUNNING ET AL.

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 04/18/2005.
2. ☒ The allowed claim(s) is/are 1-22.
3. ☒ The drawings filed on 27 June 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

This is a reply to the Applicant's amendment submitted on 04/18/2005. According to this amendment, claims 1-22 are currently presented in the instant application.

Allowable Subject Matter

1. Claims 1-22 are allowed.

Reasons for Allowance

2. The following is an examiner's statement of reasons for allowance:

The closest prior art fails to disclose or fairly suggest:

- a) A phase interpolator having a plurality of switching legs, each including a tail coupling the other terminal of the switching transistors directly to ground without bias, the tail made up of a plurality of transistors, as called for in claim 1;
- b) A phase interpolator, in which each of the tails comprises four transistors in parallel to make available 16 phases of the reference clock and its complement, as called for in claim 3,
- c) A phase interpolator including an N bit digital control, where N equals the total number of transistors in tails, the digital control having N outputs coupled to respective gates in the transistors in the tails, as called for in claim 4,
- d) A phase interpolator, in which switching transistors are large enough to load the input clocks such that they have a rise and fall times that are equal to or larger than one quarter of an input clock period, as called for in claim 8;
- e) A phase interpolator, to interpolate between four input clock phase signals having four switching legs, each including a pair of differential switching transistors each having a gate,

Art Unit: 2816

the respective gates coupled respective ones of a plurality of clock phases and their complements, each differential switching transistors coupled to a respective one of the common output line and the common complemented output line, in combination with the remaining claimed limitations as called for in claim 10; and

f) A tracking receiver, in which a remote clock recovery mechanism including an N bit digital control, where N equals the total number of transistors in the tails, the control receiving a control input from the phase and frequency having N outputs coupled to respective gates in the transistors in the tails, in combination with the remaining claimed limitations, as called for in claim 16.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh M. Nguyen whose telephone number is (571) 272-1749. The examiner can normally be reached on Alternate Fri, Monday - Thursday from 7:00 to 4:30.

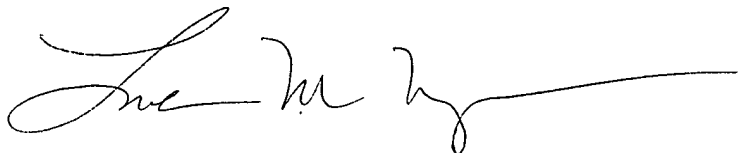
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2816

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Linh M. Nguyen
Primary Examiner
Art Unit 2816

LMN

A handwritten signature in black ink, appearing to read 'Linh M. Nguyen', with a long horizontal flourish extending to the right.